

Notice of Allowability

Application No.

10/731,115

Examiner

Sharidan Carrillo

Applicant(s)

BUDINGER ET AL.

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9/26/2007.
2. ☒ The allowed claim(s) is/are 1-3, 5, 8, 9, 11-20 and 23-28.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


SHARIDAN CARRILLO
PRIMARY EXAMINER

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Mr. Mike Keenan on 11/16/2007.

The application has been amended as follows:

a) Cancel claims 4, 6-7, 10, and 21-22.

b) Claim 1:

in step (b), after "article" insert --to a temperature of about 1400°F or above—

in step (c), line 2, after "furnace" insert --at a pressure within a range of about 500-10,000 microns,--

c) Replace the previous version of claim 11 with the following:

--11. (Currently Amended) A method according to Claim 1 including, subsequent to step (c), cooling the article under an inert gas. --

d) Replace the previous version of claim 12 with the following:

--12. (Currently Amended) A method according to Claim 11 including, subsequent to step (c), removing the cleaned article from the furnace and applying a filler of a molten metal to the surface cleaned by steps (a)-(c). --

e) Claim 15:

in step (b), after "component" insert --to a temperature of about 1400°F or above—

in step (c), line 2, after "furnace" insert --at a pressure within a range of about 500-10,000 microns,--

f) Replace the previous version of claim 16 with the following:

--16. (Currently Amended) A method according to Claim 15 including providing the hydrogen gas within the furnace at a pressure within a range of about 6000-9000 microns and evacuating the furnace to a vacuum pressure of about 50 microns, or less. --

g) Replace the previous version of claim 17 with the following:

--17. (Currently Amended) A method according to Claim 15 including providing the hydrogen gas within the furnace at a pressure within a range of about 6000-9000 microns and evacuating the furnace to a vacuum pressure of about 1 micron or less. --

h) Claim 18:

line 3, after "pressure" delete "of" and insert --and—

i) Replace the previous version of claim 19 with the following:

--19. (Currently Amended) A method of cleaning surfaces and surface cracks on a metallic article, comprising the steps of:

(a) disposing the article in a vacuum furnace;

(b) evacuating the furnace;

(c) heating the article in the vacuum furnace to a temperature of about 1400°F;

(d) in a first cycle, introducing hydrogen gas at a pressure within the range of about 6000-9000 microns into the furnace to obtain a partial pressure within the furnace;

(e) raising the temperature of the article within the furnace from said about 1400°F to a predetermined temperature during said first cycle;

- (f) holding said predetermined temperature of the article within the furnace for a predetermined time period during said first cycle;
- (g) evacuating the furnace during said first cycle;
- (h) in a second cycle following said first cycle, reintroducing hydrogen gas into the furnace to obtain the partial pressure within the furnace;
- (i) raising the temperature of the article within the furnace to said predetermined temperature during said second cycle;
- (j) holding said predetermined temperature of the article within the furnace for said predetermined time period during the second cycle; and
- (k) evacuating the furnace during the second cycle to thereby remove reaction products resulting from a reaction between hydrogen gas and surface contaminants on the article and substantially all residual hydrogen gas from within the furnace.--

j) Claim 23, line 2, before "about" insert --the predetermined temperature of--

k) Claim 24, line 2, before "about" insert --the predetermined temperature of--

l) Replace the previous version of claim 25 with the following:

--25. (Currently Amended) A method according to Claim 19 wherein steps (f) and (j) include holding said predetermined temperature of the article within the furnace for a period of between .5-1 hour. --

m) Replace the previous version of claim 27 with the following:

--27. (Currently Amended) A method according to Claim 19 wherein steps (a) through (k) are performed in sequence and, following step (k) and in a third cycle, reintroducing hydrogen gas into the furnace to obtain the partial pressure within the furnace, raising the temperature of the article within the furnace to said predetermined temperature, holding said predetermined temperature of the article within the furnace for said predetermined time period and evacuating the furnace. --

n) Replace the previous version of claim 28 with the following:

--28. (Currently Amended) A method according to Claim 19 wherein steps (b) and (g) include evacuating the furnace to a vacuum level of about 1 micron or below, steps (e) and (i) include raising the temperature of the article within the furnace to said predetermined temperature of about 2200°F and steps (f) and (j) include holding said

predetermined temperature of the article within the furnace for a period of at least about .5-1 hour. --

3. The following is an examiner's statement of reasons for allowance: The rejections of the claims as being anticipated over Nakayama et al. and unpatentable over the Burns references are withdrawn in view of arguments presented by applicant. The closest prior art is that of Dietz et al. (4452642) and Pietruska et al. (5549767), both references are directed to the removal of contaminants from metallic components by vacuum in combination with hydrogen gas. Dietz fails to teach applicant's claimed limitation of heating the article in the furnace to a temperature of about 1400°F (i.e.760C) or above. Dietz teaches heating the article within a temperature range between 100-250C. Additionally, Pietruska teaches the temperature limitations, however, fails to teach the claimed pressure limitations for hydrogen gas within the furnace.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharidan Carrillo whose telephone number is 571-272-1297. The examiner can normally be reached on M-W 6:30-4:00pm, alternating Thursday.

Application/Control Number:
10/731,115
Art Unit: 1792


Page 6

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sharidan Carrillo
Primary Examiner
Art Unit 1792

bsc



SHARIDAN CARRILLO
PRIMARY EXAMINER